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Jesse Wedgwood Mighels with a Bibliography and a Catalogue of His Species

By RICHARD I. JOHNSON

Although Jesse Wedgwood Mighels was active in conchology for little more than a decade before the middle of the last century, he described as new nearly one hundred species of mollusks, most of them from New England and the Hawaiian Islands. Through his efforts the Portland Society of Natural History acquired a collection of mollusks which for some years had few rivals in the United States.

Mighels was born in Parsonsfield, Maine on July 7, 1795. He was teaching school by the time he was eighteen. He soon began the study of medicine under the direction of a local physician, Dr. James Bradbury. After attending some "medical lectures" at Dartmouth College, he was awarded the degree of M.D. in 1823. Three years later, Mighels married Evalina A. Rust of Norway, Maine. They lived in Minot, Maine for nine years, then moved to Portland where Mighels won a reputation in surgery. Mighels began the study of conchology in 1827, and it is obvious from the annotated remnants of his library (now in the Portland Society of Natural History) that he spent long hours mastering this science. When the Portland Society of Natural History was formed, Mighels was elected corresponding secretary at the first election of officers in December 1843. He held this position until he moved to Cincinnati, Ohio in 1847.

Even before the Society was founded, Mighels was collecting shells. At first he valued shells only for their intrinsic beauty,

and in accordance with the custom of the time, he wanted only a pair of each species.

It was not long before a new light began to dawn upon him: for in reply to demands for shells made of persons living more or less remote from Portland he was told that shells of his own neighborhood would be acceptable in return. The most that he could do was to gather together a dozen or twenty different kinds of such mean appearance that they did not seem worth the trouble of collecting, much less worthy of acceptance by persons owning large collections of splendid shells.

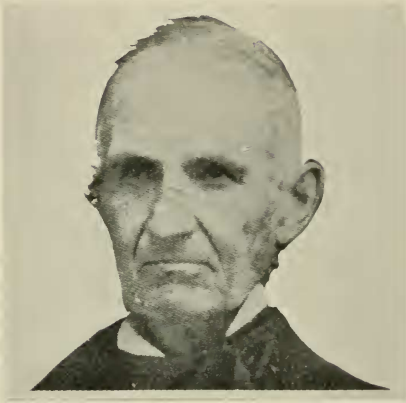
The experiment was made, and the demand came for more. Then, for the first time, he began to understand that a thorough knowledge of the conchology of his own region was an essential step towards acquiring that of other countries, and it was always the surest and safest method of obtaining the necessary materials. With a boat and a dredge our [Portland] Harbour was fully explored and great was the surprise and pleasure manifested in drawing from their dwelling places numerous living shells of forms and colors wholly new.*

In 1846 Mighels sold his shell collection to the Portland Society of Natural History for \$1000. It consisted of over three thousand species and upwards of ten thousand specimens, including all of the species known to inhabit the State of Maine, as well as many "rare and interesting varieties."

A year later Mighels moved to Cincinnati, Ohio where he became a professor of obstetrics and diseases of women and children in the Cincinnati College of Medicine and Surgery. It is mentioned in "Daniel Drake and his Followers" by Otto Juetner that in Cincinnati Mighels "wrote good papers on obstetrics." Since the Cincinnati Natural History Museum was housed in the old College of Medicine Building, it would seem natural that Mighels would have become active in the museum, making the acquaintance of his old correspondent J. G. Anthony; but strangely Mighels' name does not appear on a single record of the institution.

It was in Cincinnati that news reached Mighels that on January 8, 1854 a fire had totally destroyed the collections of the Portland Society of Natural History. Upon receipt of this sad news Mighels wrote lugubriously to the Society on January 10:

* Norton, A. H., 1927: *Maine Naturalist* **7**, no. 2, pp. 67-68. From the Portland Tri-Weekly Advertiser, February 24, 1854.



J. W. Nichols.

1795-1861

Plate 26. Copied from Norton, 1927, p. 65.

Photographed by F. P. Orchard.

Is it possible that my beautiful collection of shells is destroyed? Is it all ruined? Must I know that I can see that collection no more?

The work of nine years of delightful enthusiastic industry—is it all gone? ... Your beautiful collections of shells, and birds, and minerals and fossils—alas, are they all lost?

... When my eye caught that telegraphic announcement, I was almost affected to tears. It cannot *all* be replaced.

How is it possible to replace the deep water species of Maine and the Gulf of the St. Lawrence? The species from Europe, East and West Indies, Sandwich Islands, from the Nile, India, Africa, South America and Oregon? What a loss! Money and books and goods and buildings can be replaced but that collection, I fear never!

... I have but few specimens of anything. There are a few species of British fossils in my possession of much value. To these you are welcome, as soon as the spring opens.*

Sometime before 1857, when Mighels was leaving a dimly lighted court room where he had been serving as a witness, he plunged down an open shaft or stairway and sustained injuries from which he never fully recovered.

In 1858 he returned to Norway, Maine, his wife's birthplace, where he remained until his death on September 16, 1861.

Mighel's first contribution to conchology was a list of the shells of Maine printed in 1841. Two hundred and seven species are enumerated, sixteen of which are nude names. Five of these were described the following year with C. B. Adams in the *Journal of the Boston Society of Natural History*. In this paper twenty-four species are clearly described and adequately illustrated with figures drawn by Mighels. It is interesting to note that in his "Catalogue of the Shells of Maine" (1843, *Boston Journal of Natural History* 4, p. 308), Mighels has dropped the name of C. B. Adams as co-author, stating, after due thanks to Prof. Adams that his name had been placed on the paper as co-author through an error of the editor.

In Mighels' paper describing fifty-one shells, most of them from the Hawaiian Islands, the descriptions are very brief and none of the species is figured, with the result that the identification of some of these species has been difficult or impossible. Where we have had authentic type material a lectotype has been selected and the lectotypes of those species that were

* Norton, A. H. 1927: *Maine Naturalist* 7, no. 2, p. 69. From the *Portland Tri-Weekly Advertiser*, February 24, 1854.

not figured by Mighels are herein figured. In a few instances, where no types could be found, neoholotypes have been chosen on the basis of subsequent identification.

Unfortunately, Mighels' own set of types was destroyed in the Portland Society of Natural History holocaust of 1854. Mighels did, however, send types of many of his species to the Boston Society of Natural History, to Prof. C. B. Adams of Amherst College, and to J. G. Anthony. All of these types are now in the Museum of Comparative Zoölogy. Mighels sent types of a few of his species to Dr. J. C. Jay, whose collection is now in the American Museum of Natural History in New York. Unfortunately, in a rather extensive search for this material we were able to find only one of these type lots. There are types of some of the Hawaiian species in the Cuming Collection, now in the British Museum, and L. Pfeiffer described several species which had been sent to Cuming under manuscript names.

The late Dr. C. M. Cooke, Jr. generously offered the following notes regarding the localities of Mighels' Hawaiian species:

Undoubtedly Mighels obtained a large part of his Hawaiian material from the Reverend Edward Johnson, a keen shell collector, who for many years (from 1837) lived at Waioli near Hanalei on Kauai. Wesley Newcomb and one or two other authors* also had material from Johnson.

There is a note on page 18 of the B. P. Bishop Museum copy of volume 2 of the Proceedings of the Boston Society of Natural History, in the hand of William Harper Pease which says: "The marine species were from Kauai without doubt." (Mighels attributes most of them as coming from Oahu).

* * * *

ACKNOWLEDGMENTS

The author is especially indebted to the late Dr. C. M. Cooke, Jr. of the B. P. Bishop Museum for generously contributing much information regarding many of Mighels species and for checking the identification of most of the types of the Hawaiian species. Thanks are extended to Mr. Ralph Dury, Director,

* C. B. Adams received material from Johnson.

Cincinnati Museum of Natural History; to Miss Ethel L. Hutchins, Reference Department of the Public Library of Cincinnati, Ohio; and to Prof. W. B. Hendrickson of MacMurry College for information on the years Mighels spent in Cincinnati. Grateful thanks are extended to W. J. Clench, M. E. Champion and R. D. Turner for many invaluable suggestions and for material aid during the course of this entire study.

* * * *

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- Mighels, J. W., 1841, Aug. 3, Letter to J. G. Anthony. Manuscript in the Museum of Comparative Zoölogy.
- Three Letters to D. H. Storer. October 21, 1839; June 23, 1845; November 7, 1845. Manuscript letters in the Boston Society of Natural History.
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- Turner, R. D., 1946, John Gould Anthony With a Bibliography and Catalogue of His Species. *Occasional Papers on Mollusks*. Cambridge, Mass. **1**, No. 8, pp. 81-108.

* * * *

Bibliography of J. W. Mighels' works on recent Mollusks

- 1841, Shells of Portland and Vicinity. *Portland Tribune*, p. 64.
 "The exact date of publication is not given on the clipping, which was found by Mr. Owen Bryant in an old book purchased in Boston. It probably represents the first catalogue ever published of the shells of Maine. A few remarks com-

mending the study of conchology, and soliciting exchanges, are followed by a list, without notes, containing about 154 species, exclusive of the barnacles, etc., arranged according to the Lamarckian system.”*

1841, June, Catalogue of the Marine, Terrestrial and Fluviate Shells of Maine. Portland, Maine. [Privately printed by the author. It consists of a list of 213 shelled invertebrates.]

1842, January, Mighels, J. W. and C. B. Adams. Descriptions of twenty-four species of the Shells of New England. Boston Journal of Natural History **4**, pp. 37-54, pl. 4. [Also reprinted with the plate and repaged 1-20.]

1843, April, Catalogue of the Marine, Fluviate and Terrestrial Shells of the State of Maine and Adjacent Ocean. Boston Journal of Natural History **4**, pp. 308-345. [Also reprinted and repaged 1-39.]

1843, October, A Catalogue of the Marine, Fluviate and Terrestrial Shells of Maine and the Adjacent Ocean. Proceedings of the Boston Society of Natural History **1**, pp. 117-118. [Title only, followed by a brief review of the preceding paper.]

1843, April, Descriptions of Six Species of Shells Regarded as New. Boston Journal of Natural History **4**, pp. 345-350, pl. 16, fig. 1-6. [Also reprinted with the plate and repaged 1-6.]

1843, October, "Dr. Gould presented a paper on behalf of Dr. Mighels entitled 'Descriptions of Seven [actually six] Species of Shells regarded as new.'" Proceedings of the Boston Society of Natural History **1**, p. 129. [Short summary of the preceding paper.]

1843, October, "Dr. Gould read a paper entitled 'Descriptions of twenty-five [actually twenty-four] new species of Shells by J. W. Mighels and C. B. Adams' of which the following twenty-one are regarded as new." Proceedings of the Boston Society of Natural History **1**, pp. 48-50 [Short summary of January 1842 paper.]

* Johnson, C. W., 1905, *Nautilus* **19**, p. 92.

1844, October,* "Dr. Gould communicated on behalf of Dr. J. W. Mighels some specimens of shells with descriptions." Proceedings of the Boston Society of Natural History **1**, pp. 187-189.

1845, Descriptions of Shells from the Sandwich Islands and other localities. Proceedings of the Boston Society of Natural History **2**, pp. 18-25.

* * * *

A List of the Recent Mollusks described by J. W. Mighels with their original references and type localities

The initials BJNH refer to the Boston Journal of Natural History; PBSNH to the Proceedings of the Boston Society of Natural History; and MCZ to the Museum of Comparative Zoölogy.

J. W. Mighels is the sole author of all names except as otherwise indicated.

All locality data in brackets were previously unpublished. (See p. 217 for information on localities.)

accincta 'Mighels' Gould **Achatinella**: 1852, United States Exploring Expedition **12**, p. 89.

Gould claims that *A. accineta* is a typographical error and has changed the name to *A. accincta*. Under the International Rules of Zoölogical Nomenclature, Art. 19, this is not advised.

accincta, **Achatina**: 1845, PBSNH **2**, p. 20 (Oahu [Hawaiian Islands]). Cotypes in British Museum, figured 1849, Conch. Icon. **5**, **Achatina**, pl. 19, fig. 101.

* There is some confusion among authors regarding the date of publication of the first volume of the Proceedings of the Boston Society of Natural History. The title page bears the date 1844. Pages 1-184 (which consist of the meetings of Jan. 6, 1841 to June 19, 1843) were printed and distributed in October 1843 (see 1844, Amer. Jour. Sci. **46**, p. 203 [reviewed]; and 1843, Proc. Acad. Nat. Sci. Philadelphia **1**, p. 303 [listed as having been received at the October 24, 1843 meeting]). The beginning of the signature on p. 185 bears the date October 1844, and thereafter each signature was dated as it appeared.

- acuminata, Pleurotoma:** 1845, PBSNH 2, p. 23 (Oahu [Hawaiian Islands]).
Lectotype here selected MCZ 176467, pl. 27, fig. 18.
- admodesta, Pupa:** 1845, PBSNH 2, p. 19 (Oahu [Hawaiian Islands]).
Lectotype here selected MCZ 177005, pl. 27, fig. 17.
- aeruginosa, Osteodesma:** 1844, PBSNH 1, p. 187 (Gulf of St. Lawrence).
- anthracina, Paludina:** 1845, PBSNH 2, p. 22 (Tortola [Virgin Islands]).
Lectotype here selected MCZ 176985, pl. 27, fig. 12.
- antiqua** Mighels and Adams **Nucula:** 1842, BJNH 4, p. 53, pl. 4, fig. 4 (fossil,
Westbrook, in the vicinity of Portland, Maine).
- ampla, Limnea:** [sic] 1843, BJNH 4, p. 347, pl. 16, fig. 1-1c (Second Eagle
Lake, Maine, N. Lat. 47°).
- Apella** 'Mighels' Anthony: 1843, Proc. Acad. Nat. Sci. Philadelphia, p. 251.

"This manuscript name of Mighels was first introduced by Anthony as a synonym of *Schizostoma* Lea 1843 (*non* Bronn 1834; *non* Schlaeter 1838) in a letter which was published as above. As *Apella* 'Mighels' Anthony equals *Schizostoma* Lea it is the next available name for this genus as *Schizostoma* Lea is a homonym. This will replace *Gyrotoma* Schuttleworth 1845, as *Apella* has two years priority" (Turner, R. D., 1946, Occasional Papers On Mollusks 1, No. 8, p. 99).

- arenaria** Mighels and Adams **Cingula:** 1842, BJNH 4, p. 49, pl. 4, fig. 24
(Casco Bay, Maine).
- armatus, Bulimus:** 1845, PBSNH 2, p. 19 (Hawaii [Hawaiian Islands]).
Lectotype here selected MCZ 177001, pl. 27, fig. 15.

Dr. Cooke believed that Mighels had a mixed lot of shells from two islands when he described this species and had selected a specimen from the island of Oahu for his description. However, the type material in the MCZ is all from the island of Hawaii and is identical with *Auriculella westerlundiana* Ancey 1889, also from the island of Hawaii.

- baetica** 'Mighels' Pfeiffer **Achatinella:** 1848, Monographia Heliceorum Viventium 2, p. 235. [Nude name listed under the synonymy of *A. spirizona* Férussac.]
- caducca, Succinea:** 1845, PBSNH 2, p. 21 (Oahu [Hawaiian Islands]).
Lectotype here selected MCZ 39645, pl. 27, fig. 16.
- cancellatus** Mighels and Adams **Fusus:** 1842, BJNH 4, p. 52, pl. 4, fig. 18
(Casco Bay, Maine).
- candida** Mighels and Adams **Cemoria:** 1841, Cat. Shells of Maine, No. 105
[nude name].
- candida, Cingula:** 1841, Cat. Shells of Maine, No. 181 [nude name].

Plate 27

- Fig. 1. *Cypraea semiplota* Mighels. Neoholotype (2.4x).
Fig. 2. *Cypraea spadix* Mighels. Lectotype (2.5x).
Fig. 3. *Cypraea insecta* Mighels. Lectotype (3x).
Fig. 4. *Cypraea unifasciata* Mighels. Neoholotype (2.4x).
Fig. 5. *Pleurotoma violacea* Mighels and Adams. Lectotype (4x).
Fig. 6. *Pleurotoma rugosa* Mighels. Neoholotype (4.5x).
Fig. 7. *Turbo rubricinctus* Mighels. Lectotype (6x).
Fig. 8. *Achatina turricula* Mighels. Lectotype (natural size).
Fig. 9. *Partula virgulata* Mighels. Lectotype (natural size).
Fig. 10. *Achatinella mustelina* Mighels. Lectotype (natural size).
Fig. 11. *Pleurotoma pumila* Mighels. Neoholotype (4.5x).
Fig. 12. *Paludina anthracina* Mighels. Lectotype (4x).
Fig. 13. *Bulimulus pumicatus* Mighels. Lectotype (3x).
Fig. 14. *Achatinella citrina* Mighels. Lectotype (natural size).
Fig. 15. *Bulimulus armatus* Mighels. Lectotype (4x).
Fig. 16. *Succinea caduca* Mighels. Lectotype (4x).
Fig. 17. *Pupa admodesta* Mighels. Lectotype (8x).
Fig. 18. *Pleurotoma acuminata* Mighels. Lectotype (4x).
Fig. 19. *Achatinella picta* Mighels. Lectotype (natural size).
Fig. 20. *Helicina laciniosa* Mighels. Lectotype (4x).
Fig. 21. *Helicina rotelloidea* Mighels. Lectotype (4x).
Fig. 22. *Achatinella nubilosa* Mighels. Lectotype (natural size).
Fig. 23. *Helix tiara* Mighels. Lectotype (2.5x).

Photographs by F. P. Orchard

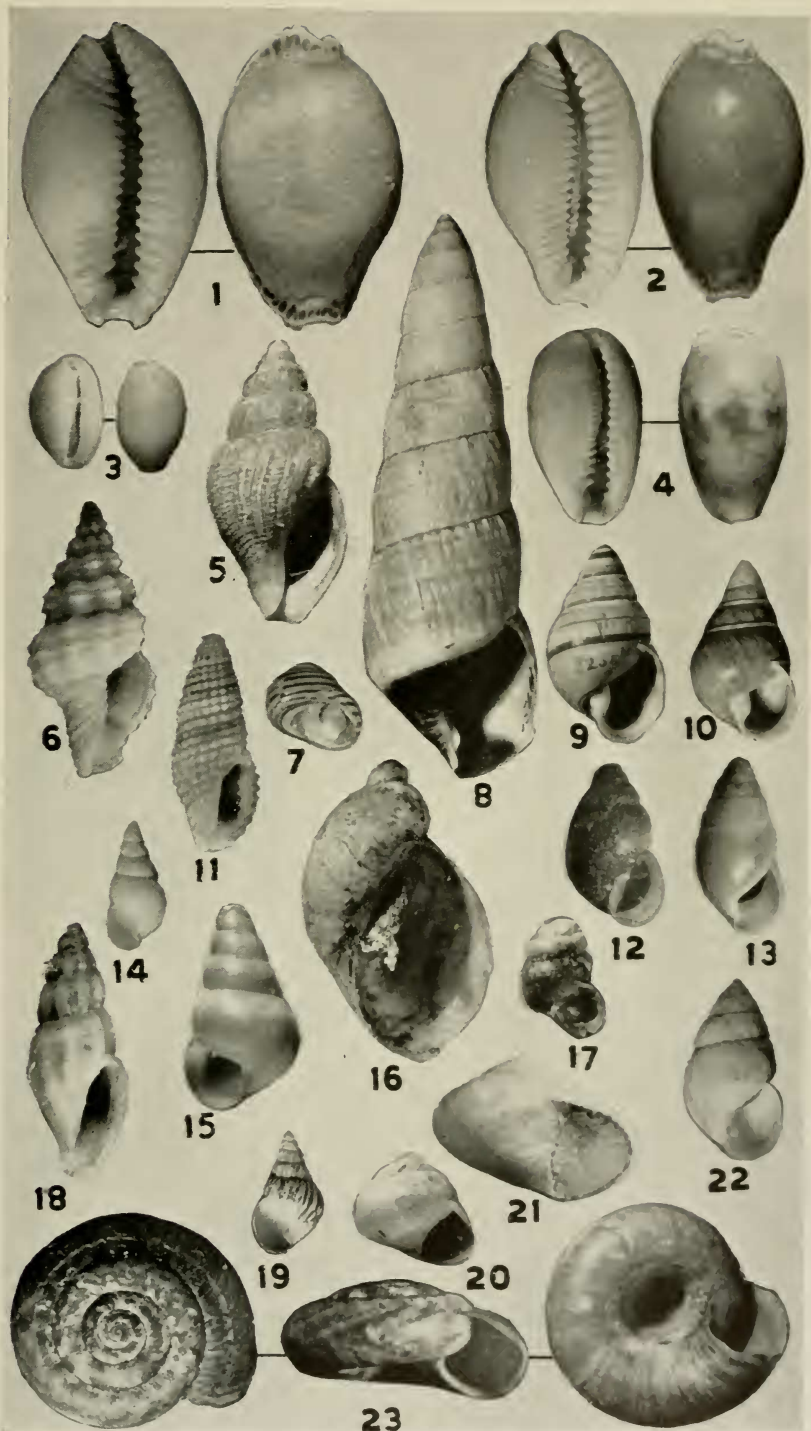


Plate 27

- carinata**, *Cingula*: 1841, Cat. Shells of Maine, No. 180 [nude name]; Mighels and Adams 1842, BJNH 4, p. 49, pl. 4, fig. 23 (Casco Bay, Maine).
cascoensis, *Nucula*: 1841, Cat. Shells of Maine, No. 66 [nude name]; Mighels and Adams 1842, BJNH 4, p. 40, pl. 4, fig. 6 (Casco Bay, Maine).
cingula, *Achatinella*: 1845, PBSNH 2, p. 21 (Oahu [Hawaiian Islands]).

Cotypes in the collections of Wesley Newcomb, Cornell University, Ithaca, New York. Types were also placed in the J. C. Jay collection, but these could not be located.

- circumsecta**, *Pleurotoma*: 1845, PBSNH 2, p. 24 (Oahu [Hawaiian Islands]).
citrina 'Mighels' Pfeiffer *Achatinella*: 1845, Monographia Heliceorum Viventium 2, p. 234 (Molokai, Sandwich Islands [Hawaiian Islands]). Lectotype here selected MCZ 156493, pl. 27, fig. 14.
clausinus, *Bulimus*: 1845, PBSNH 2, p. 20 (Hawaii [Hawaiian Islands]).

This species has never been recognized.

- coarctata**, *Delphinula*: 1843, BJNH 4, p. 349, pl. 16, fig. 6 (Casco Bay, Maine).
coronata, *Pleurotoma*: 1845, PBSNH 2, p. 23 (Oahu [Hawaiian Islands]).
corrugata, *Cypricardia*: 1844, PBSNH 1, p. 189 (Zanzibar).
costellata, *Turritella*: 1841, Cat. Shells of Maine, No. 183 [nude name].
costulata, *Pupa*: 1844, PBSNH, p. 187 (Portland, Maine).

A. A. Gould, who had undoubtedly seen Mighels' specimens, regards this species as identical with *Helix harpa* Say, 1844, PBSNH 1, p. 189.

- costulata** Mighels and Adams *Turritella*: 1842, BJNH 4, p. 50, pl. 4, fig. 20 (Casco Bay, Maine).
crassilabrum, *Pleurotoma*: 1845, PBSNH 2, p. 23 (Oahu [Hawaiian Islands]).
curta, *Schizostoma*: 1844, PBSNH 1, p. 189 (Warrior River, Alabama).

C. Goodrich has placed this species in the synonymy of *Gyrotoma incisum* Lea (1924, Univ. of Michigan, Mus. of Zoöl., Misc. Pub. 12, p. 23).

The locality "Warrior River" given above by Mighels is in error. The genus *Schizostoma* (= *Apella*) is limited in its distribution to the Coosa River in Alabama.

- cyclostomum**, *Solarium*: 1845, PBSNH 2, p. 22 (Oahu [Hawaiian Islands]).

As this name is a homonym of *Solarium cyclostomum* Menke 1830, Philippi 1853, Conchylien-Cabinet (2) 2, pt. 7, p. 36, has changed the name to *Solarium mighelsi*.

cylindracea, Schizostoma: 1844, PBSNH 1, p. 189 (Warrior River, Alabama).

C. Goodrich states that this species can not be recognized with any exactness from the description. (1924, Univ. of Michigan, Mus. of Zoöl., Misc. Pub. 12, p. 28.)

See second note under *curta* above.

decollata Mighels and Adams **Limnaea:** 1842, BJNH 4, p. 45, pl. 4, fig. 13, 13bis (Unity, Maine).

The specimen here selected as lectotype MCZ 176986 is figured in Baker, F. C., 1911, Chicago Acad. of Sciences, Special Publication No. 3, pl. 41, fig. 8.

delphinodonta Mighels and Adams **Nucula:** 1842, BJNH 4, p. 40, pl. 4, fig. 5 (Casco Bay, Maine). Lectotype here selected MCZ 176984.

diluvialis, Nucula: 1841, Cat. Shells of Maine, No. 62 [nude name].

elucens, Tellina: 1844, PBSNH 1, p. 188 (Casco Bay, Maine).

emarginata, Purpura: 1841, Cat. Shells of Maine, No. 201 [nude name].

filicatus, Sigaretus: 1845, PBSNH 2, p. 22 (Zanzibar).

fragilis, Physa: 1841, Cat. Shells of Maine, No. 144 [nude name]; Mighels and Adams, 1842, BJNH 4, p. 44, pl. 4, fig. 12 (Monmouth, Maine). Lectotype here selected MCZ 177004.

glacialis, Arca: 1843, BJNH 4, p. 322 (Gulf of St. Lawrence).

gracilentum, Cerithium: 1845, PBSNH 2, p. 22 (Oahu [Hawaiian Islands]).

hystrix 'Mighels' Pfeiffer **Helix:** 1846 Symbolae Ad Historiam Heliceorum 3, p. 67 ([East Maui] Sandwich Islands [Hawaiian Islands]).

This species was first described as *H. setigera* by A. A. Gould. Apparently Dr. Mighels suggested to Dr. Gould that as *setigera* was a homonym, *hystrix* be used. It was under this name that material was sent out and Pfeiffer was the first to publish its use. See Gould 1852, United States Exploring Expedition 12, p. 55.

implexum, Solarium: 1845, PBSNH 2, p. 22 (Oahu [Hawaiian Islands]).

incincta, Bulla: 1844, PBSNH 1, p. 188 (Casco Bay, Maine).

inornata, Achatinella: 1845, PBSNH 2, p. 21 (Oahu [Hawaiian Islands]).

The cotypes of this species placed in the J. C. Jay collection could not be located. In the Catalogue of the Shells in the

J. C. Jay collection, 4th edit., 1850, p. 215 it is listed as identical with *Achatinella turritella* Férussac.

insculpta, Pleurotoma: 1844, PBSNH 1, p. 189 (Key West, Florida).

insecta, Cypraea: 1845, PBSNH 2, p. 24 (Oahu [Hawaiian Islands]). Lectotype here selected MCZ 177006, pl. 27, fig. 3.

insignis 'Mighels' Reeve **Bulimus:** 1850, Conch. Icon. 5, **Achatinella**, species 3 [nude name listed as a synonym of *A. virgulata* Mighels].

intercarinata, Helix: 1845, PBSNH 2, p. 18 (Oahu [Hawaiian Islands]).

"Subsequent authors have considered this a synonym of *Endodonta (Thaumatodon) contorta* Férussac. (Cooke).

intermedia, Nucula: 1841, Cat. Shells of Maine, No. 66 [nude name].

jugosa, Helix: 1845, PBSNH 2, p. 19 (Waioli [Kauai, Hawaiian Islands]).

laciniosa, Helicina: 1845, PBSNH 2, p. 19 (Oahu [Hawaiian Islands]). Lectotype here selected MCZ 156497, pl. 27, fig. 20.

Dr. Cooke stated that *Orobophana berniceia* Pilsbry and Cooke becomes a synonym of *H. laciniosa* Mighels by the identification of the type. This is unfortunate because Miss Neal (1934, P. B. Bishop Museum Bull. 125, p. 39) recognized 22 varieties of *Pleuropoma laciniosa* Mighels on the basis of A. A. Gould's identification of this species, but Gould's material was from J. P. Couthouy, collected on the United States Exploring Expedition, and is not identical with the species described by Mighels. Therefore, *Pleuropoma laciniosa* (non Mighels) Neal becomes a new species with the specific name chosen from one of the varieties. "The type did not come from Oahu as stated by Mighels, but came from Kauai, presumably the north coast near to, if not, Hanalei (Waioli)." (Cooke).

laciniosum, Cerithium: 1845, PBSNH 2, p. 23 (Oahu [Hawaiian Islands]).

lacunatum, Triton: 1845, PBSNH 2, p. 24 (Oahu [Hawaiian Islands]).

laticus, Helicina: 1845, PBSNH 2, p. 19 (Oahu [Hawaiian Islands]). Lectotype here selected MCZ 156497, pl. 27, fig. 20.

ligata Mighels and Adams **Fasciolaria:** 1842, BJNH 4, p. 51, pl. 4, fig. 17 (Mingan, in the Gulf of St. Lawrence).

maculosum, Cerithium: 1845, PBSNH 2, p. 22 (Oahu [Hawaiian Islands]).

Cotypes in the British Museum, figured, Reeve 1865, Conchologia Iconica 15, **Cerithium**, pl. 14, fig. 97.

- mainiensis, Cyclas:** 1841, Cat. Shells of Maine, No. 42 [nude name].
- mendicarius** Mighels and Adams **Chiton:** 1842, BJNH 4, p. 42, pl. 4, fig. 8 (Casco Bay, Maine).
- micans, Pleurotoma:** 1845, PBSNH 2, p. 23 (Oahu [Hawaiian Islands]).
- minganensis, Mytilus:** 1844, PBSNH 1, p. 188 (Mingnan, Gulf of St. Lawrence).
- minimus** Adams and Mighels **Cyclas:** 1841, Cat. Shells of Maine, No. 41 [nude name].
- minor** Mighels and Adams **Cyclas:** 1842, BJNH 4, p. 39, pl. 4, fig. 2 (Weybridge, Vermont; Portland, Maine). Lectotype here selected MCZ 19827.
- minutissima, Margarita:** 1843, BJNH 4, p. 349, pl. 16, fig. 5 (Casco Bay, Maine).
- mustelina, Achatinella:** 1845, PBSNH 2, p. 21 (Waianai [Oahu, Hawaiian Islands]). Lectotype here selected MCZ 156494, pl. 27, fig. 10.
- nitida** Mighels and Adams **Cyclas:** 1842, BJNH 4, p. 39, pl. 4, fig. 3 (Norway, Maine). Lectotype here selected MCZ 19783.
- nodulosa, Cypricardia:** 1844, PBSNH 1, p. 188 (Key West, Florida).

Mighels received this species from T. A. Conrad under the name *Carditamera floridana*. Apparently unknown to Mighels, Conrad had published this name in 1838 (Fossils of the Tertiary Formations of the United States, p. 12). Therefore, *C. nodulosa* Mighels is a synonym of *C. floridana* Conrad.

- nubilosa, Achatinella:** 1845, PBSNH 2, p. 20 (Oahu [Hawaiian Islands]). Lectotype here selected MCZ 165606, pl. 27, fig. 22.

Pilsbry (1912, Manual of Conchology (2) 21, p. 259) states that this species is actually from Molokai. There are two poorly preserved cotypes in the collection of the Portland Society of Natural History No. 220.

- obnubila, Pleurotoma:** 1845, PBSNH 2, p. 24 (Oahu [Hawaiian Islands]).
- obtusa, Thracia:** 1841, Cat. Shells of Maine, No. 27 [nude name].
- occidentalis** Mighels and Adams **Trochus:** 1842, BJNH 4, p. 47, pl. 4, fig. 16 (Casco Bay, Maine).
- occulta** Mighels and Adams **Bulla:** 1842, BJNH 4, p. 54, pl. 4, fig. 11 (fossil, Westbrook in the vicinity of Portland, Maine). Lectotype here selected MCZ 156452.
- patula, Succinea:** 1845, PBSNH 2, p. 21 (Oahu [Hawaiian Islands]).

As this is a homonym of *Succinea patula* 'Lamarck' de Blainville 1827, the first available name is *Succinea rotundata* Gould 1845, PBSNH 2, p. 182.

pertenius, **Bulla**: 1843, BJNH 4, p. 346, pl. 16, fig. 2 (Casco Bay, Maine).

picta, **Achatinella**: 1845, PBSNH 2, p. 21 (Oahu [Hawaiian Islands]). Lectotype here selected MCZ 176982, pl. 27, fig. 19.

This species is from Maui. (Cooke).

plicata 'Mighels' Pfeiffer **Achatinella**: 1848, Monographia Heliceorum Viventium 2, p. 235 (Molokai [Hawaiian Islands]).

Cotypes in the British Museum, figured by Reeve 1850, Conchologia Iconica 6, **Achatinella**, pl. 6, fig. 44.

porrecta, **Paludina**: 1845, PBSNH 2, p. 22 (Oahu [Hawaiian Islands]).

portlandica, **Astarte**: 1843, BJNH 4, p. 345, pl. 16, fig. 2 (Casco Bay, Maine).

princeps Mighels and Adams **Cemoria**: 1842, BJNH 4, p. 42, pl. 4, fig. 9 (75-100 miles off mouth of Kennebec River, Maine, on fishing ground "Monhegan Falls," 40-75 fathoms).

producta, **Physa**: 1845, PBSNH 2, p. 21 (Oahu [Hawaiian Islands]).

pumicatus, **Bulimus**: 1845, PBSNH 2, p. 19 (Oahu [Hawaiian Islands]). Lectotype here selected MCZ 177002, pl. 27, fig. 13.

Undoubtedly from Kauai. (Cooke).

pumila, **Pleurotoma**: 1845, PBSNH 2, p. 23 (Oahu [Hawaiian Islands]). Neoholotype here selected MCZ 176993, pl. 27, fig. 11.

puncto-striata Mighels and Adams **Bulla**: 1842, BJNH 4, p. 43, pl. 4, fig. 10 (Casco Bay, Maine). Neoholotype here selected MCZ 177003.

Only one specimen was taken by Mighels which was destroyed. The neoholotype is selected from idotypes in the C. B. Adams collection.

4 carinata Mighels and Adams **Trochus**: 1841, Cat. Shells of Maine, No. 172 [nude name].

reticulata Mighels and Adams **Turritella**: 1842, BJNH 4, p. 50, pl. 4, fig. 19 (Bay Chaleur, in the Gulf of St. Lawrence). Lectotype here selected MCZ 125508.

rotelloidea, **Helicina**: 1845, PBSNH 2, p. 19 (Oahu [Hawaiian Islands]). Lectotype here selected MCZ 156499, pl. 27, fig. 21.

Dr. Cooke said that *Pleuropoma hawaiiensis* Pilsbry and Cooke becomes a synonym of *Helicina rotelloidea* Mighels by the identification of the type. "The type did not come from Oahu as stated by Mighels, but came from Kauai." (Cooke).

rubricintus, Turbo: 1845, PBSNH 2, p. 22 (Oahu [Hawaiian Islands]).
Lectotype here selected MCZ 177007, pl. 27, fig. 7.

rugosa, Pleurotoma: 1845, PBSNH 2, p. 22 (Oahu [Hawaiian Islands]).
Neoholotype here selected MCZ 176992, pl. 27, fig. 6.

As this name is a homonym of *Pleurotoma rugosa* Lea 1833, (fossil) Iredale and Tomlin (1917, Journal of Conchology 15, No. 7, p. 216) have changed the name to *Lienardia mighelsi*.

scissura 'Mighels' Anthony Apella: 1843, Proc. Acad. Nat. Sci. Philadelphia, p. 251 [nude name].

scutilus, Bulimus: 1845, PBSNH 2, p. 20 (Oahu [Hawaiian Islands]).

semicostata Mighels and Adams Cingula: not of Montagu 1803 = *Cingula carinata* Mighels and Adams.

semiplota, Cypraea: 1845, PBSNH 2, p. 24 (Oahu [Hawaiian Islands]).
Neoholotype here selected MCZ 176989, pl. 27, fig. 1.

sinuosa, Pleurotoma: 1845, PBSNH 2, p. 23 (Oahu [Hawaiian Islands]).

spadix, Cypraea: 1845, PBSNH 2, p. 25 (Oahu [Hawaiian Islands]).
Lectotype here selected MCZ 176987, pl. 27, fig. 2.

sphaerula, Cypraea: 1845, PBSNH 2, p. 24 (Oahu [Hawaiian Islands]).

subglobosa, Cancellaria: 1841, Cat. Shells of Maine, No. 188 [nude name].

submeris, Helix: 1844, PBSNH 1, p. 187 (Key West, Florida).

W. G. Binney (1869, Smithsonian Misc. Coll. No. 194, p. 184) places this species in the synonymy of *Helix varians* Menke.

subrutila, Helix: 1845, PBSNH 2, p. 18 (Oahu [Hawaiian Islands]).

H. B. Baker (1940, Bull. B. P. Bishop Mus. No. 165, p. 163) has chosen a neotype to represent this species.

sulcosa, Phasianella: 1843, BJNH 4, p. 348, pl. 16, fig. 4 (Casco Bay, Maine).

tenuicostata Mighels and Adams Pectin: 1841, Cat. Shells of Maine, No. 89 [nude name].

tenuicostatus Mighels and Adams Pectin: 1842, BJNH 4, p. 41, pl. 4, fig. 7 (Casco Bay, Maine).

Mighels realized that this species was the young of *P. magellanicus* Gmelin (1843 BJNH 4, p. 327).

tiara, Helix: 1845, PBSNH 2, p. 19 (Kauai [Hawaiian Islands]).
Lectotype here selected MCZ 176994, pl. 27, fig. 23.

todilla, Pleurotoma: 1845, PBSNH 2, p. 24 (Oahu [Hawaiian Islands]).

truncata Mighels and Adams **Thracia**: 1842, BJNH 4, p. 38, pl. 4, fig. 1 (Casco Bay, Maine). Lectotype here selected MCZ 165595.

Jeffreys (1872, Ann. Mag. Nat. Hist., p. 238) proposes the name *Thracia septentrionalis* for *Thracea truncata* Mighels and Adams, *non* Brown 1827.

turricula, **Achatina**: 1845, PBSNH 2, p. 20 (Oahu [Hawaiian Islands]). Lectotype here selected MCZ 156495, pl. 27, fig. 8.

Mighels' specimens undoubtedly came from the mountains back of Waioli, Kauai. (Cooke).

umbilicata, **Physa**: 1845, PBSNH 2, p. 21 (Oahu [Hawaiian Islands]).

unifasciata, **Cypraea**: 1845, PBSNH 2, p. 25 (Oahu [Hawaiian Islands]). Neoholotype here selected MCZ 176990, pl. 27, fig. 4.

varicosa Mighels and Adams **Margarita**: 1842, BJNH 4, p. 46, pl. 4, fig. 14 (Bay Chaleur, Gulf of St. Lawrence).

venusta, **Achatinella**: 1845, PBSNH 2, p. 21 (Oahu [Hawaiian Islands]).

"The Portland Society of Natural History possesses three specimens which had been given by Mighels to J. H. Thompson and by him turned over to the Society. Since the original type has been destroyed by fire, we propose to regard one of these shells (No. 218 Portland Soc. Nat. Hist. coll.) as the type" (Pilsbry, 1912, Manual of Conch. (2) 21, p. 347). Not found on Oahu but is from Molokai. (Pilsbry)

vestita, **Achatinella**: 1845, PBSNH 2, p. 20 (Waianai [Oahu] and Hawaii [Hawaiian Islands]).

"This species has never been recognized. It could not have come from both islands." (Cooke). The cotypes placed in the J. C. Jay collection could not be located. In the Catalogue of the J. C. Jay collection, 4th ed., 1850, p. 215, it is listed as identical with *Achatinella decora* Férussac.

violacea Adams and Mighels **Pleurotoma**: 1841, Cat. Shells of Maine, No. 186 [nude name]; Mighels and Adams, 1842, BJNH 4, p. 51, pl. 4, fig. 21 (Casco Bay, Maine). Lectotype here selected MCZ 165594, pl. 27, fig. 5.

viridans, **Achatinella**: 1845, PBSNH 2, p. 20 (Oahu [Hawaiian Islands]).

Cotypes in the British Museum. Figured by Reeve, 1850, Conchologica Iconica 6, **Achatinella**, pl. 4, fig. 25. Cotypes American Museum of Natural History No. 25532, J. C. Jay collection.

virgulata, Partula: 1845, PBSNH 2, p. 20 (Waianai [Oahu, Hawaiian Islands]). Lectotype here selected MCZ 177008, pl. 27, fig. 9.

Not found on Oahu, but is from Molokai. (Pilsbry 1912, Manual of Conchology (2) 22, p. 26.)

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BOOK REVIEWS

Dall, W. H., P. Bartsch and H. A. Rehder 1938: A Manual of the Recent and Fossil Marine Pelecypod Mollusks of the Hawaiian Islands. B. P. Bishop Museum Bulletin 153, 233 pp., 58 plates and 28 text figures.

In this rather important paper on the recent and fossil marine bivalves of the Hawaiian Islands the authors recognize 187 species of which 135 are described as new. They have also introduced 23 new genera and subgenera, making the book indispensable to anyone working on Pacific bivalves. Most of the species treated are illustrated. There are many keys to the genera and species which are an aid in identification. Very long and detailed locality data are given for many of the species; comparative remarks, however, are exceedingly limited.
—R. D. TURNER

Edmondson, H. H., 1933: Reef and Shore Fauna of Hawaii. B. P. Bishop Museum Special Publication 22, 295 pp., 153 figures.

To the ecologist and general collector of Eastern Pacific marine animals, and especially to those interested in mollusks and arthropods this book should prove quite helpful. The purpose of the book is to give a picture of Hawaiian sea shore life and the relative abundance of the various groups represented.